



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/091,353	03/06/2002	Geun Soo Lim	K-0394	7255

34610 7590 03/22/2004

FLESHNER & KIM, LLP
P.O. BOX 221200
CHANTILLY, VA 20153

EXAMINER

NGUYEN, JIMMY H

ART UNIT	PAPER NUMBER
----------	--------------

2673

5

DATE MAILED: 03/22/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/091,353

Applicant(s)

LIM, GEUN SOO

Examiner

Jimmy H. Nguyen

Art Unit

2673

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 06 March 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

1. This Office Action is made in response to applicant's papers filed on 03/06/2002. Claims 1-20 are currently pending in the application. An action follows below:

Drawings

2. Figures 3-5 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Claim Objections

3. Claims 1, 8, 15 and 18 are objected to under 37 CFR 1.75(a) because although these claims meet the requirement 112/2d, i.e., the metes and bounds are determinable, however, the followings should be made:

i. claim 1, line 10, and of claim 8, line 11, "from" should be changed to -- from a data pulse width of--, so as to clarify the invention of these claims,

ii. claim 15, line 1, "13" should be changed to --14--, because the shift register recited in claim 14 rather than in claim 13, and

iii. claim 18, line 1, "13" should be changed to --16--, because the first and second latches recited in claim 16 rather than in claim 13.

It is in the best interest of the patent community that applicant, in his/her normal review and/or rewriting of the claims, to take into consideration these editorial situations and make changes as necessary.

Claim Rejections - 35 USC § 102

Art Unit: 2673

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

5. Claims 1-6, 8-11 and 13-20 are rejected under 35 U.S.C. 102(e) as being anticipated by Yoo et al. (USPN: 6,407,510 B1), hereinafter Yoo.

The applied reference has a common assignee with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art under 35 U.S.C.

102(e). This rejection under 35 U.S.C. 102(e) might be overcome either by a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not the invention “by another,” or by an appropriate showing under 37 CFR 1.131.

Regarding to claims 1-6 and 8-11, the claimed invention reads on the Yoo reference as follows: Yoo discloses a method, for driving a plasma display panel (PDP) (best seen in fig. 2, col. 1, lines 46-50) having a plurality of discharge cells (1) formed by a plurality of scanning/sustain electrode lines (Y), a common sustain electrode line (Z) and a plurality of address electrode lines (X), comprising the steps of discharging and initializing the plurality of discharge cells (1) during a reset interval (see col. 1, lines 66-67); progressively applying scanning pulses (Vs) to the plurality of scanning/sustain electrode lines (Y) such that the scanning pulses are overlapped to each other in the region of an auxiliary scanning pulse ASP

Art Unit: 2673

(see fig. 5), and progressively applying first data pulses (each first data pulse having a width of $(T_d + T_{ad})$ or a width $(T_s + T_{as})$ of the scanning pulse (Y), and a logic value "1", i.e., the last pulse on X_n address electrode line or the pulse indicated by a dotted circular line A on X_{n+1} electrode line, see fig. 5) and second data pulses (each second data pulse having a width of $(T_d - T_{ad})$ or a width $(T_s - T_{as})$ of the scanning pulse (Y), and a logic value "0", i.e., the pulse between the first MDP and the first ADP, and on X_n address electrode line, see fig. 5); and applying sustain pulses to the plurality of scanning/sustain electrode lines (Y) and the common sustain electrode line (Z), for sustaining discharge at the discharge cells (1). See fig. 4. Further, in the case of the PDP having m scanning/sustain electrode lines ($Y_1 - Y_m$) (e.g., see fig. 2), the Yoo reference implicitly discloses the m scanning/sustain electrode lines ($Y_1 - Y_m$) divided and driving into two blocks (or parts), an upper block having $m/2$ scanning/sustain electrode lines ($Y_1 - Y_{m/2}$) and a lower block having $m/2$ scanning/sustain electrode lines $((Y_{m/2} + 1) - Y_m)$. Furthermore, the Yoo reference teaches that progressively applying scanning pulses (V_s) to the plurality of scanning/sustain electrode lines (e.g., $Y_1 - Y_m$), starting from the first scanning/sustain electrode line (Y_1) to the last scanning/sustain electrode line (Y_m) (see figs. 4 and 5). In other words, the Yoo reference implicitly teaches a step of progressively applying scanning pulses (V_s) to the plurality of scanning/sustain electrode lines ($Y_1 - Y_{m/2}$) in the upper block, starting from the first scanning/sustain electrode line (Y_1) of the upper block, to the last scanning/sustain electrode line ($Y_{m/2}$) of the upper block, and then progressively applying scanning pulses (V_s) to the plurality of scanning/sustain electrode lines $((Y_{m/2} + 1) - Y_m)$ in the lower block, starting from the first scanning/sustain electrode line ($Y_{m/2} + 1$) of the lower block,

Art Unit: 2673

to the last scanning/sustain electrode line (Y_m) of the lower block. Accordingly, the steps of the claims above are read in the Yoo reference.

Regarding to claims 13-20, the claimed invention reads on the Yoo reference as follows: Yoo discloses a device for driving a plasma display panel (PDP) (best seen in fig. 2, col. 1, lines 46-50) having an inherent scanning/sustain electrode driving part for driving a plurality of scanning/sustain electrode lines (Y), an inherent common sustain electrode driving part for driving a common sustain electrode line (Z) and an address electrode driving part (an address driver shown in fig. 9) for driving a plurality of address electrode lines (X), the address electrode driving part comprising data receiving means (a data input 30, col. 5, last line) including a plurality of shift registers (32-38), memories (latches 40, 42) including a first latch (40) and a second latch (42), a control signal generating part (a data pulse signal generator 44), and a forwarding means (a multiplexor 54) including an inherent plurality of switching devices for performing switching data between data from the control signal generating part (44) and data from the latch (42). See fig. 9 and col. 5, line 56 through col. 6, line 36. Further, as noting at col. 6, lines 43-46, Yoo teaches the control signal generating part (44) receives the video data with a logic value "1" stored in the two latches (40, 42) to provide a control signal (an auxiliary data pulse ADP of "0") with a logic value "0". As noting at col. 6, lines 46-51, Yoo teaches the forwarding means (54) providing a data pulse (MDP of "1") with a logic value "1" in response to a control signal (a clock signal CLK4 of "0") with a logic value "0". Accordingly, the elements of the claims above are read in the Yoo reference.

6. Claims 1-3, 5 and 6 are rejected under 35 U.S.C. 102(e) as being anticipated by Kang et al. (USPN: 6,603,449 B1), hereinafter Kang.

Regarding to claims 1-3, 5 and 6, the claimed invention reads on the Kang reference as follows: Kang discloses a method, for driving a plasma display panel (PDP) (col. 3, line 21) having a plurality of discharge cells (pixels, col. 3, line 26) formed by a plurality of scanning/sustain electrode lines (Y electrode lines, col. 3, lines 22-23), a common sustain electrode line (X electrode lines, col. 3, lines 22-23) and a plurality of address electrode lines (A address electrode lines, col. 3, line 24), comprising a step of discharging and initializing the plurality of discharge cells during a reset process by applying reset pulses (3) and pulses (5), before address process (see fig. 5, col. 4, line 64 through col. 5, line 15); a step of progressively applying scanning pulses (scan pulses 61-68, fig. 5, col. 4, lines 63) to the plurality of scanning/sustain electrode lines (Y), and progressively applying first data pulses (data pulses 41 and 45, see fig. 5, last waveform), each first data pulse having a width, which is the same as the width of the scanning pulses (61, 66), and a first logic value, which corresponds to the input image data and is either "1" or "0", and second data pulses (data pulses 42 and 46, see fig. 5, last waveform), each second data pulse having a width, which is the less than the width of the first data pulse, and a second logic value, which corresponds to the input image data and is either "0" or "1"; and a step of applying sustain pulses (2) to the plurality of scanning/sustain electrode lines (Y) and the common sustain electrode line (X), for sustaining discharge at the discharge cells (see fig. 5). Further, as noting in fig. 5 and at col. 4, lines 24-31, the Kang reference implicitly discloses the 8 scanning/sustain electrode lines (Y1-Y8) divided and driving into two blocks (or parts), an upper block having 4 scanning/sustain electrode lines (Y1-Y4) and a lower block having 4 scanning/sustain electrode lines (Y5-Y8). Furthermore, the Yoo reference implicitly teaches a step of progressively applying scanning pulses (61-64) to the plurality of

Art Unit: 2673

scanning/sustain electrode lines (Y1-Y4) in the upper block, starting from the first scanning/sustain electrode line (Y1) of the upper block, to the last scanning/sustain electrode line (Y4) of the upper block, and then progressively applying scanning pulses (65-68) to the plurality of scanning/sustain electrode lines (Y5-Y8) in the lower block, starting from the first scanning/sustain electrode line (Y5) of the lower block, to the last scanning/sustain electrode line (Y8) of the lower block. Accordingly, the steps of the claims above are read in the Yoo reference.

7. Claims 13, 14, 19 and 20 are rejected under 35 U.S.C. 102(b) as being anticipated by Kanazawa (USPN: 5,446,344).

Regarding to claims 13, 14 and 19, the claimed invention reads on the Kanazawa reference as follows: Kanazawa discloses a device, for driving a plasma display panel (PDP) (see fig. 14) having a scanning/sustain electrode driving part (a scan driver 25) for driving a plurality of scanning/sustain electrode lines (Y1-Yn), a common sustain electrode driving part (a X-comon driver 26) for driving a common sustain electrode line (X) and an address electrode driving part (an address driver 23) for driving a plurality of address electrode lines (A1-Am), the address electrode driving part (23) (see fig. 19) comprising data receiving means including a shift register (2301), for receiving a video data (ADATA), memories (2302) for receiving the video data from the shift register (2301) and temporarily storing the video data, a control signal generating part (a logic 2303 and a voltage step-up circuit 233a), for receiving the video data from the memories (2302) and generating a control signal used to control the ON/OFF of the two transistors (T3, T4), and forwarding means (a circuit including two transistors T3 and T4) including two switching devices (T3, T4) connected between a power source (Va) and a ground

Art Unit: 2673

terminal (see fig. 19). ". Accordingly, the elements of the claims above are read in the Kanazawa reference.

Regarding to claim 20, as noting in fig. 19, Kanazawa further teaches the transistor (T3) being a P-type transistor, which is inherently turned on in response to a control signal with a logic value "0", and provides a data pulse with a voltage (Va), i.e., a logic value "1", and the transistor (T4) being a N-type transistor, which is inherently turned on in response to a control signal with a logic value "1", and provides a data pulse with a ground voltage (Va), i.e., a logic value "0". Accordingly, the Kanazawa reference anticipates the invention of claim 20.

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claims 4 and 8-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kang as applied to claim 1 above, and further in view of Suzuki et al. (USPN: 6,262,699 B1), hereinafter Suzuki.

Regarding to claim 4, as discussed in the rejection to claim 1 above, Kang discloses progressively applying scanning pulses (61-68) to the plurality of scanning/sustain electrode lines (Y). Kang does not disclose expressly the scanning pulses overlapped each other for a preset time period, as recited in claim 4. Accordingly, Kang discloses all the limitations of claim 4, except for the scanning pulses overlapped each other for a preset time period.

However, Suzuki discloses expressly that the scanning pulses (SP) progressively applied to scanning/sustain electrode lines (Y1, Yk+1) are overlapped each other for a preset time period. See figs. 4C and 4F, col. 7, lines 15-18. It would have been obvious to a person of ordinary skill in the art at the time of the invention was made to utilize the teaching in the Suzuki reference, i.e., the scanning pulses (SP) progressively applied to scanning/sustain electrode lines overlapped each other for a preset time period, in the Kang reference, because this would reduce the address write cycle, thereby providing a high image quality, as taught by Suzuki (col. 7, lines 24-28).

Regarding to claim 8, since this claim is similar to a combination of claims 4 and 5 above, this claim is therefore rejected for the reasons set forth in claims 4 and 5.

Regarding to claim 9, since this claim is similar to a combination of claims 8 and 2 above, this claim is therefore rejected for the reasons set forth in claims 8 and 2.

Regarding to claim 10, since this claim is similar to a combination of claims 8 and 3 above, this claim is therefore rejected for the reasons set forth in claims 8 and 3.

Regarding to claim 11, since this claim is similar to a combination of claims 8 and 6 above, this claim is therefore rejected for the reasons set forth in claims 8 and 6.

Double Patenting

10. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Art Unit: 2673

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

11. Claims 1-3 and 5-7 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1 and 31 of U.S. Patent No. 6,340,960 B1, hereinafter PAT960, and further in view of Kang.

Although the conflicting claims are not identical, they are not patentably distinct from each other because the patent and the application are claiming common subject matter, as follows:

Regarding to claims 1 and 5-7, the PAT960, specifically claims 1 and 31, discloses a method for driving a PDP, comprising the step of dividing a plurality of scanning/sustain electrode lines into upper and lower blocks (or parts), and progressively applying the scanning pulses starting from the first scanning/sustain electrode line of each block (or part), (see claim 1 of the PAT960), or starting from the first scanning/sustain electrode line of the upper block and from the last scanning/sustain electrode line of the lower block (see claim 31 of the PAT960). Accordingly, claims 1 and 31 of the PAT960 discloses all the limitations of claims 1 and 5-7, except for the steps (a) and (c) of independent claim 1 and the step of "progressively applying first data pulses ... selectively", lines 8-11.

However, Kang discloses expressly steps (a) and (c) of independent claim 1 and the step of "progressively applying first data pulses ... selectively", lines 8-11. See the rejection to claim 1 under 35 U.S.C. 102(e) above. It would have been obvious to a person of ordinary skill in the art at the time of the invention was made to utilize the above mentioned steps of Kang in the invention of claims 1 and 31 of the PAT960, because the benefit of using the step (a) is to allow

Art Unit: 2673

the space charges smoothly distributed at the corresponding pixel areas, before the address process, as taught by Kang (col. 5, lines 4-7 and 12-15), the benefit of using the step (a) is to allow the space charges smoothly distributed at the corresponding pixel areas, before the address process, as taught by Kang (col. 5, lines 4-7 and 12-15), the benefit of using the step (c) is to sustain the display discharge at the pixels where the wall charges have been formed, as taught by Kang (col. 5, lines 16-19), and the benefit of using the step of “progressively applying first data pulses ... selectively”, as recited in claim 1, lines 8-11, is to enhance the displaying uniformly and stability by preventing a phenomenon in which a display discharge does not occur at to-be-displayed pixels of a specific subfield, as taught by Kang (col. 3, lines 14-19).

Regarding to claims 2 and 3, see the above rejection to claims 2 and 3 under 35 U.S.C. 102(e), as anticipated by Kang.

12. Claims 4 and 8-12 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1 and 31 of U.S. Patent No. 6,340,960 B1 in view of Kang and further in view of Suzuki.

Regarding to claim 4, as discussed in the rejection to claim 1 above, the above combination of PAT960 and Kang discloses all the limitations of claim 4, except for the scanning pulses overlapped each other for a preset time period.

However, Suzuki discloses expressly that the scanning pulses (SP) progressively applied to scanning/sustain electrode lines (Y1, Yk+1) are overlapped each other for a preset time period. See figs. 4C and 4F, col. 7, lines 15-18. It would have been obvious to a person of ordinary skill in the art at the time of the invention was made to utilize the teaching in the Suzuki reference, i.e., the scanning pulses (SP) progressively applied to scanning/sustain electrode lines overlapped

Art Unit: 2673

each other for a preset time period, in the combination of PAT960 and Kang, because this would reduce the address write cycle, thereby providing a high image quality, as taught by Suzuki (col. 7, lines 24-28).

Regarding to claim 8, since this claim is similar to a combination of claims 4 and 5 above, this claim is therefore rejected for the reasons set forth in claims 4 and 5.

Regarding to claim 9, since this claim is similar to a combination of claims 8 and 2 above, this claim is therefore rejected for the reasons set forth in claims 8 and 2.

Regarding to claim 10, since this claim is similar to a combination of claims 8 and 3 above, this claim is therefore rejected for the reasons set forth in claims 8 and 3.

Regarding to claim 11, since this claim is similar to a combination of claims 8 and 6 above, this claim is therefore rejected for the reasons set forth in claims 8 and 6.

Regarding to claim 12, since this claim is similar to a combination of claims 8 and 7 above, this claim is therefore rejected for the reasons set forth in claims 8 and 7.

Conclusion

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jimmy H. Nguyen whose telephone number is (703) 306-5422.

The examiner can normally be reached on Monday - Thursday, 8:00 a.m. - 5:00 p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bipin Shalwala can be reached at (703) 305-4938.

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks

Washington, D.C. 20231

Art Unit: 2673

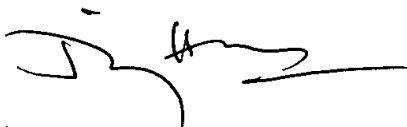
or faxed to:

(703) 872-9314 (for Technology Center 2600 only)

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive,
Arlington, VA, Sixth Floor (Receptionist).

Any inquiry of a general nature or relating to the status of this application or proceeding
should be directed to the Technology Center 2600 Customer Service Office whose telephone
number is (703) 306-0377.

JHN
March 18, 2004



Jimmy H. Nguyen
Examiner
Art Unit: 2673